Title (en)

Connecting arrangement with a plastic carrier part and a plastic thread element

Title (de)

Verbindungsanordnung mit einem Kunststoff-Trägerteil und einem Kunststoff-Gewindeelement

Title (fr)

Arrangement de relation avec une pièce en plastique de porteur et un élément en plastique de fil

Publication

EP 1591675 A2 20051102 (DE)

Application

EP 05009142 A 20050426

Priority

DE 102004021484 A 20040430

Abstract (en)

A joining assembly comprises and a threaded element of plastic material comprising a core and an external threaded portion. A joining assembly (1) comprises a support member (2) of plastic material having a receiving bore defined by a bore wall, and a threaded element (4) of plastic material comprising a core (8) and an external threaded portion (10) which, when the threaded element is threaded into the wall of the receiving bore of the support member forms an internal threaded portion in the receiving bore by a cutting and/or deforming operation. The external threaded portion of the threaded element comprises a thread extending for revolutions and being, in axial cross-section, of a profile having straight flanks that are joined by a rounded crest. The core of the threaded element has, between the revolutions of the thread, a cylindrical external surface, which, in an axial cross-section, is joined to the flanks of the thread by rounded corners. The revolution of the thread defines a helical gap of a volume exceeding that of the thread. Independent claims are also included for: (1) a tool for making a joining assembly, comprising a tool body comprising an axially extending mandrel and an abutment portion, the mandrel comprising an axially extending pin having a short threaded portion adjacent the abutment portion and a cylindrical support portion adjacent the threaded portion; (2) a threaded element for a joining assembly, comprising a screw; and (3) a method for making a joining assembly, comprising threading the threaded element into the receiving bore of the support member at a high speed so that the plastic material of the support member is plastified by friction and the plastified plastic material is displaced from the external thread of the threaded element in a direction opposite to the threading direction to provide an encapsulating enclosure of the external thread when the plastified plastic material has been solidified.

Abstract (de)

Das aus Kunststoff bestehende Gewindeelement (4,6) für diese Verbindungsanordnung hat ein speziell ausgebildetes Gewindeprofil mit einem kleinen Profilwinkel (α) zwischen 30° und 50° und einer relativ großen Rundung (31) an den Flankenspitzen, wobei der Freiraum zwischen den Windungen des Gewindeganges (11) ein größeres Volumen als der Gewindegang hat. Um eine spezielle Schneidgeometrie des Gewindeprofils zu erzeugen, besteht das Gewindeelement (4,6) aus mehreren Winkelsegmenten, die radial gegeneinander so versetzt sind, dass jeweils benachbarte Winkelsegmente in Einschraubrichtung wirksame Schneidkanten bilden. Beschrieben werden außerdem ein Werkzeug und ein Verfahren zum Herstellen einer derartigen Verbindungsanordnung. <IMAGE>

IPC 1-7

F16B 25/10; F16B 33/00; F16B 33/02

IPC 8 full level

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CPC (source: BR EP US)

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